IN THE SPECIFICATION:

Please replace the appropriate paragraph of the substitute specification in accordance with proposed changes as outlined herein below:

Please amend page 1, last paragraph of the substitute specification, as follows:

A reported pyrosequencing is briefly explained as follows. The apparatus used is a so-called luminescence photometer. Reagents, including DNA samples; primers to determine the starting point of complementary strand synthesis; DNA synthesizing enzymes; an enzyme apyrase to decompose dNTP (deoxynucleotide triphosphates) which has been added as a substrate and remained unreacted; sulfurylase to convert pyrophosphate into ATP; luciferin; and luciferase involved in the reaction of luciferin with ATP, are placed in a titer plate. At this moment, no complementary strand synthesis occurs because dideoxynucleotides (ddNTPs), a substrate for the reaction, is not present. Four kinds of ddNTPs (i.e., dATP, dCTP, dTTP and dGTP) are added in a designated order by an ink jet system. If dCTP is the designated base to be synthesized, no reaction occurs when dATP, dTTP or dGTP is added. Reaction occurs only when dCTP is added, then the complementary strand is extended by one base length, and pyrophosphate (PPi) is released. This pyrophosphate is converted into ATP by ATP sulfurylase and the ATP reacts with luciferin in the presence of luciferase to emit chemiluminescence. This chemiluminescence is detected using a secondary photon multiplier tube or the like. Remaining dCTP or unreacted dNTP is decomposed by apyrase which converts it into a form which has no effect on the subsequent repetitive dNTP injection and the reaction which follows. The four kinds of dNTP are added repeatedly in a designated order and the base sequence is determined one by one according to the presence or absence of chemiluminescence emitted each time. This series of reactions are shown in Figure 3 (see Ronaghi, M. et al., Science 281, 363-365 (1998)).

Please amend page 6, last paragraph, as follows:

(22) A system characterized in that a DNA to be used as a template for complementary strand synthesis is immobilized onto a solid surface, pyrophosphate produced upon synthesizing complementary strand which is hybridized with the DNA is converted into ATP which is reacted with luciferin by luciferase or the like, and the DNA base sequence is monitored by detecting the resulting chemiluminescence, said system being characterized by comprising a means to remove primers and complementary strand synthesis products or to stop the extension reaction by adding dideoxynucleotides(ddNTPs) into the reaction chambers

followed by removing dideoxynucleotides(ddNTPs) after the first sequencing process using the primers, to freshly inject primers and enzymes or the like, and to subsequently carry out the second DNA sequencing process, and providing a means to carry out this process repeatedly, if necessary.